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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,132	02/23/2007	John W. Adams	AREN-060 (060.US2.PCT)	9424

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EXAMINER	
LI, RUIXIANG	
ART UNIT	PAPER NUMBER
1646	
MAIL DATE	DELIVERY MODE
09/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/561,132	ADAMS ET AL.	
	Examiner	Art Unit	
	RUIXIANG LI	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *136-154* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *136-154* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

I. Claims 136-143 and 155-157, drawn to a method comprising contacting a candidate compound with a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 and determining the ability of the compound to modulate said G protein-coupled receptor.

II. Claims 144 and 145, drawn to a method comprising contacting a candidate compound in vitro with a plurality of cardiomyocyte cells comprising a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 and determining the ability of the compound to reduce a level of expression of the G protein-coupled receptor in said plurality of cardiomyocyte cells.

III. Claims 146-147, drawn to a method comprising administering a candidate compound to a non-human mammal having a genome that is modified to provide for expression of a G protein-coupled receptor comprising an amino

acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 and determining if said compound has an activity that inhibits hypertrophy in the heart.

IV. Claim 148, drawn to a cultured cardiomyocyte cells comprising a recombinant nucleic acid encoding a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2.

V. Claim 149, drawn to a non-human mammal having a genome that is modified to provide for selective expression of a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 in cardiomyocytes.

VI. Claim 150, drawn to a non-human mammal having a genome that is modified to provide for selective inactivation of a mammalian RUP40 gene in cardiomyocytes.

VII. Claims 151-154, drawn to a method of treating or preventing a heart disease, comprising administering to a mammal in need thereof a therapeutically effective amount of an inverse agonist or antagonist of the mammalian RUP40 g protein-coupled receptor.

2. The inventions listed as Groups I-VII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of Group I is considered to be a method comprising contacting a candidate compound with a G protein-coupled

receptor comprising an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 and determining the ability of the compound to modulate said G protein-coupled receptor.

The special technical feature of Group II is considered to be a method comprising contacting a candidate compound in vitro with a plurality of cardiomyocyte cells comprising a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 and determining the ability of the compound to reduce a level of expression of the G protein-coupled receptor in said plurality of cardiomyocyte cells.

The special technical feature of Group III is considered to be a method comprising administering a candidate compound to a non-human mammal having a genome that is modified to provide for expression of a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 and determining if said compound has an activity that inhibits hypertrophy in the heart.

The special technical feature of Group IV is considered to be a cultured cardiomyocyte cells comprising a recombinant nucleic acid encoding a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2.

The special technical feature of Group V is considered to be a non-human mammal having a genome that is modified to provide for selective expression of a G protein-coupled receptor that comprises an amino acid

sequence having at least 95% identity to amino acids 991-1346 of SEQ ID NO: 2 in cardiomyocytes.

The special technical feature of Group VI is considered to be a non-human mammal having a genome that is modified to provide for selective inactivation of a mammalian RUP40 gene in cardiomyocytes.

The special technical feature of Group VII is considered to be a method of treating or preventing a heart disease, comprising administering to a mammal in need thereof a therapeutically effective amount of an inverse agonist or antagonist of the mammalian RUP40 g protein-coupled receptor.

Accordingly, Groups I-VII are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept. Thus, unity of invention is lacking and restriction is appropriate.

Species Election

3. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows: heart diseases as listed in claims 141, 151, and 153.

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected

species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: each disease has distinct pathologic features.

Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruixiang Li whose telephone number is (571) 272-0875. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol, can be reached on (571) 272-0835. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, please contact the Electronic Business Center (EBC) at the toll-free phone number 866-217-9197.

/Ruixiang Li/
Primary Examiner, Art Unit 1646

Ruixiang Li, Ph.D.
September 5, 2008